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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,688	03/14/2005	Keiji Yamada	259593US90PCT	6699
22850	7590	10/22/2008		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER YOUNG, NATASHA E	
			ART UNIT 1797	PAPER NUMBER
			NOTIFICATION DATE 10/22/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/509,688	<b>Applicant(s)</b> YAMADA, KEIJI	
	<b>Examiner</b> NATASHA YOUNG	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 August 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/23/2007,06/16/2008,08/26/2008</u>                          | 6) <input type="checkbox"/> Other: _____                          |



## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichikawa et al (US 5,595,581) in view of Ohno et al (US 6,669,751 B1).

Regarding claim 1, Ichikawa et al discloses a honeycomb filter for purifying exhaust gases (see Abstract) comprising: a columnar body comprising a plurality of porous ceramic members, each of said porous ceramic members having a plurality of through holes extending in parallel with one another in a length direction of said columnar body and a wall portion interposed between said through holes, said wall portion being configured to collect particles in exhaust gases (see Abstract, column 4, lines 44-54; column 6, lines 13-24; and figures 1a, 1b, 2 and 3), since the sealer ceramic fiber and cordierite may be employed and the honeycomb structure is made of

the same material as the sealing member, and plurality of plugs filling ones of said through holes at one end of said columnar body and other ones of said through holes at the other end of said columnar body.

Ichikawa et al does not disclose that said columnar body has a porosity which is in a range from 20 to 80 %, said plugs have a porosity which is 90% or less, or said porosity of said plugs is set to 0.15 to 4.0 times of said porosity of said columnar body.

However, Ichikawa et al disclose the porosity of the first sealing member is desired to be 110-140% of the porosity of the honeycomb structure, the porosity of the honeycomb filter and the first sealing member is 45% (see column 4, lines 4-33 and column 6, lines 13-24), (see column 2, lines 32-37 and Tables 1-2, where, second sealing member is 40 to 65 %), such that said porosity of said plugs is set to 0.15 to 4.0 times of said porosity of said columnar.

Ichikawa et al does not disclose a segmented honeycomb filter.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a segmented honeycomb filter since it was known in the art that honeycomb filter assemblies are less vulnerable to thermal impacts and as a result prevent breakage resulting from cracks (see MPEP 2144.03 (A-E)).

Ohno et al discloses a porous ceramic honeycomb filter made of cordierite and having an average porosity of 30 to 50% (see column 3, lines 41-45 and column 5, lines 35-41) and a honeycomb filter wherein said columnar body comprises a sealing material later combining said porous members (see column 5, lines 30-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Ichikawa et al with the teachings of Ohno et al such that said columnar body has a porosity which is in a range from 20 to 80 % and said plugs have a porosity which is 90% or less to provide a honeycomb filter having small pressure loss and superior mechanical strength (see Ohno et al column 2, lines 60-62).

Claim 2 depends on claim 1 such that the reasoning used to reject claim 1 will be used to reject the dependent portions of the claims.

Regarding claim 2, Ichikawa et al does not disclose a honeycomb filter wherein said porosity of said plugs is set to 0.25 to 1.5 times of said porosity of said columnar body.

However, Ichikawa et al disclose the porosity of the first sealing member is desired to be 110-140% of the porosity of the honeycomb structure, the porosity of the honeycomb filter and the first sealing member is 45% (see column 4, lines 4-33 and column 6, lines 13-24), (see column 2, lines 32-37 and Tables 1-2, where, second sealing member is 40 to 65 %) such that said porosity of said plugs is set to 0.25 to 1.5 times of said porosity of said columnar.

Claim 3 depends on claim 1 or 2 such that the reasoning used to reject claim 1 or 2 will be used to reject the dependent portions of the claim.

Regarding claim 3, Ichikawa et al does not disclose a honeycomb filter further comprising a catalyst supported by said columnar body.

Ohno et al discloses a honeycomb filter comprising a catalyst supported by said columnar body (see column 5, lines 42-61).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Ichikawa et al with the teachings of Ohno et al for the predictable result of enhanced purification of exhaust gases.

Claim 4 depends on claim 3 such that the reasoning used to reject claim 3 will be used to reject the dependent portions of the claims.

Regarding claim 4, Ichikawa et al does not disclose a honeycomb filter further comprising a catalyst supporting film provided over a surface of said columnar body.

Ohno et al discloses a honeycomb filter further comprising a catalyst supporting film provided over a surface of said columnar body (see column 5, lines 42-61).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Ichikawa et al with the teachings of Ohno et al for the predictable result of enhanced purification of exhaust gases.

Claim 7 depends on claim 1 such that the reasoning used to reject claim 1 will be used to reject the dependent portions of the claims.

Regarding claim 7, Ichikawa et al does not disclose a honeycomb filter wherein said columnar body comprises a sealing material layer combining said porous members.

Ichikawa et al does not disclose a segmented honeycomb filter.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a segmented honeycomb filter since it was known in the art

that honeycomb filter assemblies are less vulnerable to thermal impacts and as a result prevent breakage resulting from cracks (see MPEP 2144.03 (A-E)).

Ohno et al discloses a honeycomb filter wherein said columnar body comprises a sealing material layer combining said porous members (see column 5, lines 30-51).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teachings of Ichikawa et al with the teachings of Ohno et al to provide a honeycomb filter having small pressure loss and superior mechanical strength (see Ohno et al column 2, lines 60-62).

### ***Response to Arguments***

Applicant's arguments filed August 11, 2008 have been fully considered but they are not persuasive.

The applicant argues that because the Ichikawa et al reference regenerates the honeycomb filter by the blow-back process and criticizes that an apparatus which removes the collected particles by burning by means of periodically igniting the filter is ineffective and problematic (see Remarks pages 3-4) such that Ichikawa et al teaches away from Ohno et al.

The examiner disagrees with the argument that Ichikawa et al teaches away from Ohno et al such that it would not have been obvious to combine the teachings of Ichikawa et al with Ohno et al.

Because Ohno et al overcomes the deficiency of removing the collected particles by burning by means of periodically igniting the filter, the examiner believes that it is proper to combine the teachings of Ichikawa et al with the teachings of Ohno et al.



Ichikawa et al discloses since only combustible fine particles deposit inside the filter, the collected fine particles can be removed by burning up by means of periodically igniting the filter but such conventional exhaust gas filters pose a problem in that not only do these filters require a means for collecting incombustible particles discharged through the through-pore to the outside of the filter, but also, even though the through-pores are provided in the sealing members, blocking of the thin partition walls of the filters is increased as the deposits are built up right below the sealing members in the first cell and, in addition, the first particles collected in the filter can not completely be remove by ignition (see column 1, lines 23-50).

Ohno et al discloses a honeycomb filter wherein the collected fine particles can be removed by burning up by means of periodically igniting the filter and the exhaust gas was efficiently processed (see column 9, lines 45-63) such that Ohno et al overcomes the deficiently of regenerating the filter by periodically igniting it.

The applicant argues that the porosity of the second sealing members (22) described in Ichikawa et al is believed to undesirably increase the pressure.

The sealing bodies (14) of Ohno et al have a porosity of 35% to 50% (see column 8, lines 25-37).

Ichikawa et al discloses the sealing member (22) has a porosity of 40-65% (see column 4, line 4-54 and table 2) in which the first four sealing members having the same porosity as the sealing bodies of Ohno et al such that the examiner believes that undesirable increases in pressure loss would not occur in at least the first four sealing members of Ichikawa et al.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NATASHA YOUNG whose telephone number is 571-270-3163. The examiner can normally be reached on Mon-Thurs 7:30 am-6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. Y./

Examiner, Art Unit 1797

/Walter D. Griffin/

Supervisory Patent Examiner, Art Unit 1797